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8/19/08

CONOCOPHILLIPS COMPANY ("CONOCOPHILLIPS"),
ON BEHALF OF PHILLIPS PETROLEUM COMPANY,
TOSCO CORPORATION AND ASSETS OF 76 PRODUCTS COMPANY

RESPONSES TO JANUARY 18, 2008
EPA FIRST REQUEST FOR INFORMATION
PORTLAND HARBOR SUPERFUND SITE
PORTLAND, OREGON

HERBICIDE MSDS SHEETS

RESPONSE TO QUESTION 25

Revised February 1, 2005

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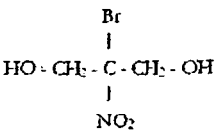
MATERIAL SAFETY DATA SHEET

2K7* BUGSTICK

PCP #21281, 25325
EPA REG. #67420-1 EPA EST. #67420-CN-01

PRODUCT IDENTIFICATION:

Synonyms:		Myacide AS Technical Stick
Chemical name	:	2-Bromo-2-Nitropropane-1,3-Diol (BNPD)
CAS No	:	52-51-7
EINECS No	:	200-143-0
Formula	:	

PHYSICAL/CHEMICAL PROPERTIES:

Purity	:	85% BNPD
M. Pt.	:	About 70°C
Flash point	:	None
Appearance	:	White or off white "stick"
Solubility	:	Soluble in water

PRECAUTIONARY MEASURES:

Health : Eye and skin irritant. Avoid ingestion, inhalation and contact with skin, eyes and clothing. Where there is a risk of contact, wear protective clothing.

Storage : Store away from:

a) Oxidizing materials
b) Heat and sources of ignition
c) Food and food containers

AVOID CONTACT WITH METALS

Waste : For information on the disposal of unused, unwanted product and the clean up of spills, contact the regional office of Environment Canada or the Manufacturer.

TOXICOLOGY INFORMATION:

The active ingredient in the 2K7* Bugstick has been used for many years as a preservative for skin applied cosmetics and toiletries and also in toothpaste and oral pharmaceuticals. In these application areas, its record of safe and effective use is unique.

A summary is given below of the main features of the compound relating to mammalian and environmental toxicity. Full details of the tests referred to are available on request.

Mammalian Toxicity: Myacide CAS

Acute LD_{50}	Rat	(oral)	- 307 mg/kg (females)
		(dermal)	- 1600 mg/kg
	Mouse	(oral)	- 327 mg/kg (females)

No evidence of mutagenicity of carcinogenicity has been observed.

Irritancy and contact sensitivity:

Irritancy is a localized response and in general is treated rapidly by removal of the irritant. Sensitization is an allergic response; the body "recognized" a sensitizer on subsequent exposure and exhibits a less localized reaction, ranging from itching and redness of the skin in the surrounding area, through to more serious whole body responses.

Myacide CAS is the industrial grade of a chemical used in cosmetics all over the world. Records show that complaints of skin reactions attributable to this compound are extremely rare. In normal use therefore, Myacide CAS can be regarded as a significantly safer material to handle than many other biocides. The high water solubility of Myacide CAS contributes to safety, enabling rapid and easy skin/eye washing in cases of accidental contact.

Environmental toxicity: Myacide CAS has a low order of toxicity to fish and wildlife. 96 hr LC_{50} concentrations have been determined for the following species

Rainbow Trout	20 mg/litre
Brown Shrimp	121 mg/litre
Mysid Shrimp	5.9 mg/litre
Blue Gill Sunfish	35.7 mg/litre
Sheepshead Minnow	57.6 mg/litre

Acute Oral LD_{50} Mallard Duck 510 mg/kg

Field trials and laboratory studies have shown that Myacide CAS is environmentally non-persistent. It undergoes chemical breakdown and biological degradation. In model activated sewage treatment systems, experiments have shown that levels up to 15 ppm are tolerated. Furthermore, many years use in water treatment confirm that correct use of Myacide CAS will produce no harmful effect on the environment.

Myacide CAS has been awarded Category Classification by the U.K. Department of Energy Scheme of Selection of Chemicals for use offshore. This allows discharge of up to 10 tonnes of Myacide CAS into the sea at each site of operation (eg. offshore oil rigs) per year, before the authorities require notification.

EMERGENCY MEASURES:

Fire Fighting: The Bugstick will burn in air producing toxic gases. Self-contained breathing apparatus should be provided for firemen fighting fires in confined spaces.
Water spray, foam, carbon dioxide and dry chemical powder are suitable extinguishing agents.

Spillage: Immediately sweep up and remove spilled material, then clean the area with detergent and water.

First aid: In case of contact with skin or eyes, give prolonged irrigation with water. In case of ingestion, wash out the mouth thoroughly with water and give water to drink. In all cases obtain medical attention.

TRANSPORT CLASSIFICATION:

Less than 500 kg: "Limited Quantity"
More than 500 kg: Class 4.1

The information in this Safety Sheet is believed to be accurate, but is given without warranty.
For more information contact:

OSP MICROCHECK INC.
#1, 1715 - 27 AVENUE NE
CALGARY, ALBERTA CANADA T2E 7E1

Phone (403) 291-1658
Fax (403) 250-6711

* 2K7 is a registered trademark of OSP Microcheck Inc.

MATERIAL SAFETY DATA SHEET

CLASS LV4 2,4-D PHENOXY HERBICIDE

MANUFACTURER: CENEX/LAND O'LAKES AGRONOMY CO.
ADDRESS: P.O. BOX 64089 INVER GROVE HEIGHTS, MN 55164-0089
EMERGENCY TELEPHONE NO: CALL CHEMTREC, DAY OR NIGHT: 1-800-424-9300
TELEPHONE NUMBER FOR INFORMATION: 1-800-232-3639

SECTION I – HAZARDOUS INGREDIENTS IDENTITY AND INFORMATION

HAZARDOUS COMPONENTS	OSHA PEL	ACGIH TLV	OTHER LIMITS	CAS#	%
2,4-Dichlorophenoxy-acetic acid, iso-octyl esters	NDA	10 mg/m³	NDA	94-75-7	66.2
Inert ingredients					33.8

SECTION II – PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT: 181 °C
SP. GRAVITY (H20): 1.0432
VAPOR PRESSURE (mm Hg): NDA
MELTING POINT: NA
VAPOR DENSITY: NDA
EVAPORATION RATE: NDA
SOLUBILITY IN WATER: Slightly soluble (emulsifiable).
APPEARANCE AND ODOR: Amber liquid with slight phenolic odor.

SECTION III – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): 160 °F TOC
FLAMMABLE LIMITS: Not determined.
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, foam, water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Use self-contained breathing apparatus and full protective gear in confined areas of buildings.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Use water to keep fire-exposed containers cool. DO NOT USE WATER TO EXTINGUISH FIRE unless unavoidable to prevent spreading of material.

SECTION IV – REACTIVITY DATA STABILITY:

UNSTABLE: [ ] CONDITIONS TO AVOID:

STABLE: [X] CONDITIONS TO AVOID: Avoid exposure to heat or flame.

INCOMPATIBILITY (MATERIALS TO AVOID): Acid, base, oxidizing materials.
HAZARDOUS DECOMPOSITION OR BY PRODUCTS: Noxious fumes (HCL) under fire conditions.

HAZARDOUS POLYMERIZATION:

MAY OCCUR: [ ] CONDITIONS TO AVOID:

WILL NOT OCCUR: [X] CONDITIONS TO AVOID:

SECTION V – HEALTH HAZARD DATA

ROUTES OF ENTRY: Ingestion, dermal, inhalation.
HEALTH HAZARDS: EYES: Slight irritation. SKIN: Slight irritation, may burn skin. INGESTION: Harmful if swallowed, may cause gastrointestinal irritation. INHALATION: Slight irritation but not hazardous.
SIGNS AND SYMPTOMS OF EXPOSURE: Nausea, vomiting, abdominal cramps, diarrhea.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: NDA

EMERGENCY AND FIRST AID PROCEDURES:

EYES: Irrigate with water for at least 15 minutes. SKIN: Wash with soap and water for 25 minutes, wash contaminated clothing separately. INHALATION: Move victim to fresh air, apply artificial respiration if breathing has stopped. INGESTION: Do not induce vomiting. Give large amounts of water or milk.
IN ALL INSTANCES seek medical attention.

SECTION VI – PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Absorb with inert material such as sand, clay, kitty litter, or sawdust. Large spills should be contained.
WASTE DISPOSAL METHOD: If wastes cannot be disposed of according to label instructions contact your State Pesticide or Environmental Control Agency or the hazardous waste representative at the nearest EPA for guidance.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Read label completely. Avoid contact with skin or eyes. Avoid breathing mist. Keep out of reach of children. Store away from fertilizers, food, seeds, and insecticides.
OTHER PRECAUTIONS: Wash thoroughly after use and before eating or smoking.

SECTION VII – CONTROL MEASURES–PROCESS AREA

RESPIRATORY PROTECTION: Not normally required during use
VENTILATION- LOCAL EXHAUST: Required
PROTECTIVE GLOVES: Required
EYE PROTECTION: Safety glasses or goggles
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Long sleeved shirt or coveralls.
WORK/HYGIENIC PRACTICES: Wash thoroughly after use and before eating or smoking. Do not smoke or eat in work area.

SECTION VIII – REGULATORY COMPLIANCE

THE FOLLOWING INFORMATION MAY BE USEFUL IN COMPLYING WITH VARIOUS STATE AND FEDERAL LAWS AND REGULATIONS UNDER VARIOUS ENVIRONMENTAL STATUTES:

REPORTABLE QUANTITY (RQ), EPA REGULATION 40 CFR 302 (CERLA Section 107):
CHEMICAL -2,4-Dichlorophenoxyacetic acid CAS #: 94-75-7
RQ:100# (Equivalent amount of this product would be 26 gallons)

THRESHOLD PLANNING QUANTITY (TPQ), EPA REGULATION 40 CFR 355 (SARA Sections 301-304):CHEMICAL- 2,4-Dichlorophenoxyacetic acid
CAS #: 94-75-7 TPQ: 10,000#

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372 (SARA Section 313): CHEMICAL - 2,4-Dichlorophenoxyacetic acid
CAS #:94-75-7 % BY WEIGHT IN PRODUCT: 44.0%

HAZARDOUS CHEMICAL REPORTING, EPA REGULATION 40 CFR 370 (SARA Sections -311-312): CHEMICAL - 2,4-Dichlorophenoxyacetic acid
CAS #: 94-75-7

EPA HAZARD CLASSIFICATION CODE:

ACUTE HAZARD	CHRONIC HAZARD	FIRE HAZARD	PRESSURE HAZARD	REACTIVE HAZARD	NOT APPLICABLE
XX	XX	XX			

HAZARD RATING: NFPA
2 FIRE 2 TOXICITY 0 REACTIVITY 0 CORROSIVENESS

HAZARD RATING CODE:
0-None 1-Slight 2-Moderate 3-High U-Unknown

SECTION IX – TRANSPORTATION INFORMATION

For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Material Incidents. DOT P 5800.5.

DOT IDENTIFICATION:
4xl gallon and 2x2-1/2 gallons:
Not regulated
Freight description: Compound, weed killing, non-regulated

RQ:
100# 2,4-D
(Equivalent amount of this product would be 26 gallons)

30 gallons:
RQ, Other regulated substance, liquid, n.o.s., (2,4-D), 9, NA 3082, PG III

Bulk over 119 gallons:
RQ, Combustible liquid, n.o.s. (contains fuel oil), combustible liquid, NA 1993, PG III, RQ, (2-4-D)

LABELING AND PLACARDING REQUIREMENTS

On Units Of More Than 119 Gallons:

WORDED : COMBUSTIBLE NUMERIC : 1993

OSHA REQUIRED LABEL INFORMATION:

In compliance with hazard and right-to-know requirements, the following OSHA Hazard Warnings should be found on a label, bill of lading or invoice accompanying this shipment. NOTE: Product label will contain additional non-OSHA related information.

DATE: January 10, 1996 SUPERSEDES: May 4, 1995

Revision: Format change.

The information herein was given in good faith but no warranty, expressed or implied was made. Consult Cenex/Land O'Lakes Agronomy Company for further information.

NA = NOT APPLICABLE NDA = NO DATA AVAILABLE

MATERIAL SAFETY DATA SHEET

CLASS 4(A 2,4-D PHENOXY HERBICIDE

MANUFACTURER: CENEX/LAND O'LAKES AGRONOMY CO.
ADDRESS: P.O. BOX 64089 INVER GROVE HEIGHTS, MN 55164-0089
EMERGENCY NO. - DAY OR NIGHT: 1-800-424-9300

TELEPHONE NUMBER FOR INFORMATION: 1-800-232-3639

SECTION I – HAZARDOUS INGREDIENTS IDENTITY AND INFORMATION

HAZARDOUS COMPONENTS	OSHA PEL	ACGIH TLV	OTHER LIMITS STEL	CAS#	%
2,4-Dichlorophenoxyacetic acid, dimethylamine salt	10 mg/m³		20 mg/m3	94-75-7	47.3
Inert ingredients					52.7

SECTION II – PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT: 10°C SP. GRAVITY (H_2O) 1.157
VAPOR PRESSURE (mm Hg): NDA MELTING POINT: NA
VAPOR DENSITY: NDA EVAPORATION RATE: NDA
SOLUBILITY IN WATER: Infinite
APPEARANCE AND ODOR: Dark brown to black liquid with fish phenolic odor.

SECTION III – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NONE FLAMMABLE LIMITS : Not determined.

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, foam, water fog.

SPECIAL FIRE FIGHTING PROCEDURES: If water is used, use a soft fog to avoid spreading contamination. Use self-contained breathing apparatus and full protective gear in confined areas of buildings. Contain water to prevent entry into water supplies. UNUSUAL FIRE AND EXPLOSION HAZARDS: Noxious vapors under high temperature conditions.

SECTION IV – REACTIVITY DATA - STABILITY:

UNSTABLE: [ ] CONDITIONS TO AVOID:

STABLE: [X] CONDITIONS TO AVOID: Avoid exposure to heat or flame.

INCOMPATIBILITY (MATERIALS TO AVOID): Acids and oxidizing materials.

HAZARDOUS DECOMPOSITION OR BY PRODUCTS: Hydrogen chloride, nitrogen oxide under fire conditions.

HAZARDOUS POLYMERIZATION:

MAY OCCUR: [ ] CONDITIONS TO AVOID:

WILL NOT OCCUR: [X] CONDITIONS TO AVOID:

SECTION V – HEALTH HAZARD DATA

HEALTH HAZARDS: EYE: May cause severe irritation with corneal injury and may result in permanent impairment of vision, even blindness. SKIN CONTACT: Prolonged exposure may cause skin irritation. SKIN ABSORPTION: A single prolonged skin exposure may result in the materials being absorbed in harmful amounts. The LD50 for skin absorption in rabbits is 2871 mg/kg. INGESTION: Single dose oral toxicity is low. The LD50 for male rats is 1492 mg/kg and for female is 837 mg/kg. Ingestion may cause gastrointestinal irritation. INHALATION: Single exposure to vapors is not likely to be hazardous.

SIGNS AND SYMPTOMS OF EXPOSURE: SYSTEMIC & OTHER EFFECTS: Excessive exposure may cause liver, kidney, gastrointestinal and muscular effects. Signs and symptoms of excessive exposure may be nausea and/or vomiting and abdominal cramps and/or diarrhea. Various animal cancer tests have shown no reliable positive association between 2,4-D exposure and cancer. Epidemiology studies have been both positive and negative with the majority being negative. Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother. High dietary levels of 2,4-D caused toxic effects (weight and viability reduction) in rats on a reproduction test. Has been shown to be negative in some vitro ("test tube") mutagenicity tests and positive in others. Results of mutagenicity tests in animals have been inconclusive.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

EMERGENCY FIRST AID PROCEDURES: EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel. SKIN: Wash off in flowing water or shower. Wash contaminated clothing before reuse. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. INGESTION: Induce vomiting by touching back of throat with finger. Give large amounts of water or milk , and transport to medical facility. INHALATION: Remove to fresh air if effects occur. Consult medical personnel.
FIRST AID: NOTE TO PHYSICIAN: Corrosive. May cause stricture. If lavage is performed, suggest endotracheal and/or esophagoscopic control. If burn is present, treat as any thermal burn after decontamination. Supportive care, treatment based on judgement of the physician in response to reaction of the patient. No specific antidote.

SECTION VI – PRECAUTIONS FOR SAFE HANDLING AND USE
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Absorb spill in inert material. Dike area in case of large spills.
WASTE DISPOSAL METHOD: Dispose of in accordance with regulations.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: See label. Keep out of reach of children. Do not get in eyes, on skin or clothing. Do not swallow. Washing facilities near work area. Do not store near fertilizer, seed, fungicide or insecticides. Do not contaminate irrigation ditches or water used for domestic purposes . OTHER PRECAUTIONS : Wash contaminated clothing separately before reuse.

SECTION VII – CONTROL MEASURES--PROCESS AREAS
RESPIRATORY PROTECTION: Not normally required during use
VENTILATION: LOCAL EXHAUST: General area exhaust is acceptable.
PROTECTIVE GLOVES: Impervious required.
EYE PROTECTION: Use safety glasses or goggles.
PROTECTIVE CLOTHING OR EQUIPMENT: Long-sleeved shirt or coveralls.
WORKPLACE AND HYGIENIC PRACTICES: Wash thoroughly after handling and before eating or smoking. Do not smoke or eat while handling.

SECTION VIII - - REGULATORY COMPLIANCE
THE FOLLOWING INFORMATION IS SUPPLIED TO AID IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ENVIRONMENTAL STATUTES:

REPORTABLE QUANTITY (RQ) , EPA REGULATION 40 CFR 302 (CERLA Section 102): CHEMICAL - 2,4-Dichlorophenoxyacetic acid CAS # 94-75-7
RQ: 100# (Equivalent amount of this product would be 26 gallons)

THRESHOLD PLANNING QUANTITY (TPQ) , EPA REGULATION 40 CFR 355 (SARA sections 301-304): CHEMICAL - NA CAS #: NA TPQ: NA

TOXIC CHEMICAL RELEASE REPORTING, EPA REGULATION 40 CFR 372 (SARA Section 313) : CHEMICAL - 2,4-Dichlorophenoxyacetic acid
CAS #: 94-75-7 % BY WEIGHT IN PRODUCT: 39.3%

HAZARDOUS CHEMICAL REPORTING, EPA REGULATION 40 CFR 370 (SARA Sections 311-312) : CHEMICAL - 2,4-Dichlorophenoxyacetic acid
CAS #: 94-75-7

EPA HAZARD CLASSIFICATION CODE:

ACUTE HAZARD	CHRONIC HAZARD	FIRE HAZARD	PRESSURE HAZARD	REACTIVE HAZARD	NOT APPLICABLE
XX	XX				

HAZARD RATING: NFPA
1 FIRE 2 TOXICITY 0 REACTIVITY 3 CORROSIVENESS

HAZARD RATING CODE : 0-None 1-Slight 2-Moderate 3-High U-Unknown

SECTION IX – TRANSPORTATION INFORMATION

For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Material Incidents, DOT P 5800.5

DOT IDENTIFICATION:
4 x 1 gallon and 2 x 2-1/2 gallon: Not regulated

RQ :
100# 2,4-D (Equivalent amount of product would be 26 gallons)

30 gallon drum, 119 gallon or less of bulk: RQ, Other regulated substance, liquid, n.o.s., (2,4-D), 9, NA 3082, PG III

Bulk over 119 gallons: RQ, Other regulated substance, liquid, n. o. s. , (2, 4-D), Marine Pollutant, 9, NA 3082, PG III

OSHA REQUIRED LABEL INFORMATION: In compliance with hazard and right-to-know requirements, the following OSHA Hazard Warnings should be found on a label, bill of lading or invoice accompanying this shipment . NONE

NOTE: Product label will contain additional non-OSHA related information.

DATE: January 10, 1996 SUPERSEDES: May 4, 1995

Revision: Format change

The information herein was given in good faith but no warranty, expressed or implied was made. Consult Cenex/Land O' Lakes Agronomy Company for further information

NA = NOT APPLICABLE NDA = NO DATA AVAILABLE

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MATERIAL SAFETY DATA SHEET
Rohm and Haas Company

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

KATHON® 886 MW Biocide

Product Code : 62368
Key : 904283-1

MSDS Date : 12/09/99

COMPANY IDENTIFICATION

ROHM AND HAAS COMPANY
100 INDEPENDENCE MALL WEST
PHILADELPHIA, PA 19106-2399

EMERGENCY TELEPHONE NUMBERS

HEALTH EMERGENCY : 215-592-3000
SPILL EMERGENCY : 215-592-3000
CHEMTREC : 800-424-9300

KATHON® is a trademark of Rohm and Haas Company or one of its subsidiaries or affiliates

2. COMPOSITION/INFORMATION ON INGREDIENTS

No		CAS REG NO	WEIGHT (%)
1	5-Chloro-2-methyl-4-isothiazolin-3-one	26172-55-4	10 - 12
2	2-Methyl-4-isothiazolin-3-one	2682-20-4	3 - 5
3	Magnesium nitrate	10377-60-3	14 - 18
4	Magnesium Chloride	7786-30-3	8 - 10
5	Water	7732-18-5	60 - 64

See Section 8, Exposure Controls / Personal Protection

3. HAZARDS IDENTIFICATION

Primary Routes of Exposure

Inhalation
Skin Contact
Eye Contact

Inhalation

Inhalation of vapor or mist can cause the following:
- irritation of nose, throat, and lungs

Eye Contact

Material can cause the following:
- corrosion to eyes - irreversible eye injury

Skin Contact

Skin irritation effects can be delayed for hours.
Material can cause the following:
- burns - corrosion to the skin - allergic contact dermatitis

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PHILADELPHIA, PA 19106-2399

Ingestion

Material is harmful if swallowed.

4. FIRST AID MEASURES

Inhalation

Move subject to fresh air.

Eye Contact

IMMEDIATELY flush eyes with a large amount of water for at least 15 minutes. Get prompt medical attention.

Skin Contact

Wash affected skin areas thoroughly with soap and water immediately after exposure. Remove and wash contaminated clothing thoroughly. Do not take clothing home to be laundered. Discard contaminated shoes, belts and other articles made of leather. Get prompt medical attention.

Ingestion

If swallowed, give 2 glasses of water to drink. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person.

Note to Physician

MATERIAL IS CORROSIVE. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

Flash Point	Not Applicable
Auto-ignition Temperature	Not Applicable
Lower Explosive Limit	Not Applicable
Upper Explosive Limit	Not Applicable

Unusual Hazards

Combustion has the potential to generate toxic fumes of the following:
- hydrogen chloride - nitrogen oxides - sulfur oxides

Extinguishing Agents

Use extinguishing media appropriate for surrounding fire.

Personal Protective Equipment

Wear self-contained breathing apparatus (pressure-demand NIOSH approved or equivalent) and full protective gear.

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PHILADELPHIA, PA 19106-2399

Special Procedures

Use water spray to cool containers exposed to fire. Minimize exposure. DO NOT breathe fumes. Contain run-off.

6. ACCIDENTAL RELEASE MEASURES

Personal Protection

Wear a NIOSH approved (or equivalent) respirator (with organic vapor/ acid gas cartridge and a dust/mist filter) during spill clean-ups and deactivation of this material.
MATERIAL IS CORROSIVE. Protective clothing, including chemical splash goggles, nitrile or butyl rubber full length gloves, rubber apron, or clothing made of nitrile or butyl rubber, and rubber overshoes must be worn during spill clean-ups and deactivation of this material. If material comes in contact with the skin during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, First Aid Measures, for further information.

Procedures

WARNING: KEEP SPILLS AND CLEAN-UP RESIDUALS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER. Absorb the spill with spill pillows or inert solids such as clay or vermiculite, and transfer contaminated materials to suitable containers for disposal. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Let stand for 30 minutes. Flush the spill area with copious amounts of water to chemical sewer (if in accordance with local procedures, permits and regulations). DO NOT add deactivation solution to the waste pail to deactivate the adsorbed material. See SECTION 13, "Disposal Considerations", for information regarding the disposal of contained materials.

7. HANDLING AND STORAGE

Storage Conditions

The maximmum recommended storage temperature for this material is 40C/104F. The minimum recommended storage temperature for this material is -10C/14F. Store in a well ventilated area. The product as supplied evolves gas (largely carbon dioxide) slowly. To prevent the buildup of pressure the product is packaged in specially vented containers. Keep this product in the original container when not in use. Container must be stored and transported in an upright position to prevent spilling the contents through the vent.
Do not store this material in containers made of the following:
- steel

Handling Procedures

This material is corrosive. See SECTION 8, Exposure Controls/Personal Protection, prior to handling.

Other

CONTAINERS HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue (vapors and/or liquid) follow all MSDS and label warnings even after container is emptied.

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100 INDEPENDENCE MALL WEST
PHILADELPHIA, PA 19106-2399

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit Information

No		CAS REG NO	WEIGHT (%)
1	5-Chloro-2-methyl-4-isothiazolin-3-one	26172-55-4	10 - 12
2	2-Methyl-4-isothiazolin-3-one	2682-20-4	3 - 5
3	Magnesium nitrate	10377-60-3	14 - 18
4	Magnesium Chloride	7786-30-3	8 - 10
5	Water	7732-18-5	60 - 64

Comp.		ROHM AND HAAS		OSHA		ACGIH	
No.	Units	TWA	STEL	TWA	STEL	TWA	STEL
1	mg/m3	0.076	0.23	None	None	None	None
2	mg/m3	1.5	4.5	None	None	None	None
3		None	None	None	None	None	None
4		None	None	None	None	None	None
5		None	None	None	None	None	None

Respiratory Protection

Typical use of this material does not result in workplace exposures that exceed the exposure limits listed in the "Exposure Limit Information" Section. For those special workplace conditions where the listed exposure limits are exceeded, a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. For concentrations up to 10 times the exposure limit, a NIOSH approved (or equivalent) half-mask or full facepiece air purifying respirator equipped with cartridges for organic vapors and dust/mist pre-filters should be worn.

For those unlikely situations where exposure may greatly exceed the listed exposure limits (i.e. greater than 10-fold), or in any emergency situation, wear a NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure-demand mode or a full facepiece airline respirator in the pressure-demand mode with emergency escape provision.

See SECTION 6, Accidental Release Measures, for respirator and protective clothing requirements for spill clean-up and decontamination of this material.

Eye Protection

Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Hand Protection

NOTE: Material is a potential skin sensitizer.
The glove(s) listed below provide protection against permeation:
- Nitrile
- Butyl rubber

Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.
Rinse and remove gloves immediately after use. Wash hands with soap and water.

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PHILADELPHIA, PA 19106-2399

Other Protection

Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact.

Engineering Controls (Ventilation)

Use local exhaust ventilation with a minimum capture velocity of 150 ft/min. (0.75 m/sec.) at the point of dust or mist evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Other Protective Equipment

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color	Amber
State	Liquid
Odor Characteristic	Pungent odor
pH	1.0 to 3.0
Viscosity	16 CPS @ 25°C/77°F
Specific Gravity (Water = 1)	1.3
Vapor Density (Air = 1)	0.62 Estimate
Vapor Pressure	0.0027 mmHg Component No. 1
Melting Point	-33°C/-27°F
Boiling Point	100°C/212°F Water
Solubility in Water	Completely soluble
Percent Volatility	60 to 64 % Water
Evaporation Rate (BAc = 1)	< 1

NOTE: Vapor Pressure for Component No. 2 = 4.4 x 10-5 mmHg

See Section 5, Fire Fighting Measures

10. STABILITY AND REACTIVITY

Instability

This material is considered stable under specified conditions of storage, shipment and/or use. See SECTION 7, Handling And Storage, for specified conditions.

Hazardous Decomposition Products

Thermal decomposition may yield the following:
- hydrogen chloride - sulfur dioxide - oxides of nitrogen

Hazardous Polymerization

Product will not undergo polymerization.

Incompatibility

Avoid contact with the following:
- oxidizing agents - reducing agents - amines - mercaptans

ROHM AND HAAS COMPANY
100 INDEPENDENCE MALL WEST
PHILADELPHIA, PA 19106-2399

11. TOXICOLOGICAL INFORMATION

Acute Data

Acute Oral LD50 - rat: 457 mg/kg product
Dermal LD50 - rabbit: 660 mg/kg product
Skin Irritation - rabbit: Corrosive (product)
Eye Irritation - rabbit: Corrosive (product)
Acute 4 Hr Inhalation - rat: 0.33 mg/L ai

Carcinogenicity Data

Carcinogenicty: Non-carcinogenic in both a mouse dermal and rat oral carcinogenicity study.

Mutagenicity Data

Mutagenicity: Collective data indicate non-mutagenic

Reproductive/Teratology Data

Teratogenicity: Not teratogenic

Sensitization Data

Sensitization: Skin sensitizer

12. ECOLOGICAL INFORMATION

Octanol/Water Coefficient = 0.401 (log P) for Component No.1
Octanol/Water Coefficient = -0.486 (log P) for Component No.2

Biodegradation (aquatic metabolism):
Component No. 1 t 1/2 anerobic = 4.8 hr
Component No. 1 t 1/2 aerobic = 17.3 hr
Component No. 2 t 1/2 aerobic = 9.1 hr

Environmental Toxicity

Acute Fish 96 Hr LC50, Rainbow Trout: 0.19 mg/L ai
Acute Fish 96 Hr LC50, Bluegill Sunfish: 0.28 mg/L ai
Acute Daphnia 48 Hr EC50: 0.16 mg/L ai
Acute Algal EC50, Selenastrum: 16 ug/L ai
Acute Algal EC50, Skeletonema: 3 ug/L ai
Activated Sludge Respiration Inhibition EC50: 4.5 mg/L ai

13. DISPOSAL CONSIDERATIONS

Procedure

Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations. (See 40 CFR 268)

ROHM AND HAAS COMPANY
100 INDEPENDENCE MALL WEST
PHILADELPHIA, PA 19106-2399

14. TRANSPORT INFORMATION

US DOT Hazard Class ..... (CLASS) 8 (CORROSIVE MATERIAL)

This classification is the primary hazard class only. Exceptions in CFR 49 Parts 171-177 may apply. Consult CFR 49 Parts 171-177 to determine the appropriate subsidiary hazard class(es).

15. REGULATORY INFORMATION

Workplace Classification

This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

This product is subject to regulation under the Canadian Pest Control Products Act (P.C.P. Act). Therefore, this product is excluded from the supplier labeling and material safety data sheet requirements as specified in Section 12 of the Hazardous Products Act.

SARA TITLE 3: Section 311/312 Categorizations (40CFR 370)

This product is a hazardous chemical under 29CFR 1910.1200, and is categorized as an immediate health hazard..

SARA TITLE 3: Section 313 Information (40CFR 372)

This product contains a chemical which is listed in Section 313 at or above de minimis concentrations. The following listed chemicals are present: (Quantity present is found elsewhere on this MSDS.)
- Magnesium nitrate (10377-60-3) as nitrate compound

CERCLA Information (40CFR 302.4)

This material has a reportable quantity under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304. The material's hazardous waste number and reportable quantity is listed below. Releases of this material in excess of its reportable quantity must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.
Corrosivity, 100 lbs.

Waste Classification

When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste with the characteristic of corrosivity, hazardous waste number: D002

United States

This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is therefore exempt from U.S. Toxic Substances Control Act (TSCA) Inventory listing requirements.

ROHM AND HAAS COMPANY
100 INDEPENDENCE MALL WEST
PHILADELPHIA, PA 19106-2399

16. OTHER INFORMATION

Rohm and Haas Hazard Rating		Scale
Toxicity	3	4=EXTREME
Fire	0	3=HIGH
Reactivity	0	2=MODERATE
Special	C	1=SLIGHT
		0=INSIGNIFICANT
		C=CORROSIVE

Ratings are based on Rohm and Haas guidelines, and are intended for internal use.

HMIS Hazard Ratings

HMIS Hazard Ratings: HEALTH = 3, FLAMMABILITY = 0, REACTIVITY = 0.
PERSONAL PROTECTION: See Section 8, Exposure Controls/Personal Protection for recommended handling of material as supplied; check with supervisor for your actual use condition.
Scale: 0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe
* = Chronic Effects (See Section 3, Hazards Identification)

HMIS is a registered trademark of the National Paint and Coatings Association.

ABBREVIATIONS:
ACGIH = American Conference of Governmental Industrial Hygienists
OSHA = Occupational Safety and Health Administration
TLV = Threshold Limit Value
PEL = Permissible Exposure Limit
TWA = Time Weighted Average
STEL = Short-Term Exposure Limit
BAc = Butyl acetate
Bar denotes a revision from previous MSDS in this area.

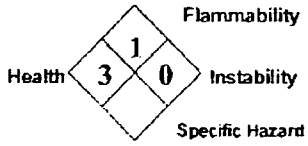
BAKER HUGHES
Baker Petrolite

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name	**X-CIDE® 102 INDUSTRIAL BACTERICIDE**	**Code**	XC102
Supplier	Baker Petrolite A Baker Hughes Company 12645 W. Airport Blvd. (77478) P.O. Box 5050 Sugar Land, TX 77487-5050 For Product Information/MSDSs Call: 800-231-3606 (8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 281-276-5400	**Version**	2.0
Material Uses	Industrial Bactericide	**Effective Date**	**4/20/2006**
24 Hour Emergency Numbers	CHEMTREC 800-424-9300 (U.S. 24 hour) Baker Petrolite 800-231-3606 (001)281-276-5400 CANUTEC 613-996-6666 (Canada 24 hours) CHEMTREC Int'l 01-703-527-3887 (International 24 hour)	**Print Date**	4/20/2006
			® a trademark of Baker Hughes, Inc.

National Fire Protection Association (U.S.A.)



Section 2. Hazards Identification

Physical State and Appearance	State: Liquid., Color: Colorless., Odor: Strong Fruity. Medicinal.
CERCLA Reportable Quantity	Not applicable.
Hazard Summary	DANGER. May cause chronic effects. May be irritating to eyes, skin and respiratory tract. May cause skin sensitization (allergic reaction). May cause respiratory tract sensitization (allergic reaction). May be toxic if inhaled.
Routes of Exposure	Skin (Contact), Eyes, Inhalation.
Potential acute health effects	
	Eyes May be corrosive to the eyes. May cause eye burns and permanent eye injury.
	Skin May be severely irritating to the skin. May cause burns on prolonged contact. Skin sensitizer. May cause allergic skin reactions with repeated exposure.
	Inhalation May be toxic if inhaled. May be severely irritating to the lungs. May cause respiratory sensitization, an allergic reaction.
	Ingestion Not considered a likely route of exposure, however, may be harmful or cause irritation if swallowed.
Medical Conditions aggravated by Exposure	Exposure to this product may aggravate medical conditions involving the following: respiratory tract, skin/epithelium, eyes.
See Toxicological Information (section 11)	
Additional Hazard Identification Remarks	Draize Test Eye (Rabbit): Extreme Irritant/Corrosive. Draize Test Skin (Rabbit): Extreme Irritant.

Continued on Next Page

Section 3. Composition and Information on Ingredients

Name	CAS #	% by Weight
Glutaraldehyde	111-30-8	10 - 30

See Section 8 for information on permissible exposure limits and threshold limit values.

Section 4. First Aid Measures

Eye Contact	Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open. Get medical attention immediately.
Skin Contact	Remove contaminated clothing and shoes immediately. Wash affected area with soap and mild detergent and large amounts of lukewarm, gently flowing water until no evidence of chemical remains (for at least 20-60 minutes). Get medical attention if irritation occurs.
Inhalation	Remove to fresh air. Oxygen may be administered if breathing is difficult. If not breathing, administer artificial respiration and seek medical attention. Get medical attention if symptoms appear.
Ingestion	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never induce vomiting or give anything by mouth to a victim who is unconscious or having convulsions. Get medical attention if symptoms appear.
Notes to Physician	*Not available.*
Additional First Aid Remarks	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	Not regulated as flammable or combustible.
OSHA Flammability Class	IIIB
Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Open Flames/Sparks/Static. Heat.
Fire Fighting Media and Instructions	*In case of fire, use foam, dry chemicals, or CO2 fire extinguishers.* Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and public waterways.
Protective Clothing (Fire)	Do not enter fire area without proper personal protective equipment, including NIOSH approved self-contained breathing apparatus.
Special Remarks on Fire Hazards	Not available.

Continued on Next Page

Section 6. Accidental Release Measures

Spill	Put on appropriate personal protective equipment. Keep personnel removed and upwind of spill. Shut off all ignition sources; no flares, smoking, or flames in hazard area. Approach release from upwind. Shut off leak if it can be done safely. Contain spilled material. Keep out of waterways. Dike large spills and use a non-sparking or explosion proof means to transfer material to an appropriate container for disposal. For small spills add absorbent (soil may be used in absence of other suitable materials scoop up material and place in a sealed, liquid-proof container. Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Other Statements	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.
Additional Accidental Release Measures Remarks	Not available.

Section 7. Handling and Storage

Handling and Storage	Put on appropriate personal protective equipment. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Protect from ignition. Store in a dry, cool and well ventilated area. Keep away from incompatibles. Keep container tightly closed and dry.
Additional Handling and Storage Remarks	Not available.

Section 8. Exposure Controls/Personal Protection

Exposure Limits	Glutaraldehyde	**ACGIH (United States).** CEIL: 0.05 ppm **OSHA PEL 1989 (United States).** CEIL: 0.2 ppm
Additional Information on Exposure Limits	The OSHA Exposure Limit for glutaraldehyde has been revoked. The OSHA permissible exposure levels shown above are the OSHA 1989 levels or from subsequent OSHA regulatory actions. Although the 1989 levels have been vacated the 11th Circuit Court of Appeals, Baker Petrolite Corporation recommends that these lower exposure levels be observed as reasonable worker protection.	
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.	

Personal Protection

Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended, however, to determine the level of personal protective equipment appropriate for these job tasks and conditions.

Eyes Chemical safety goggles.

Body Wear long sleeves to prevent repeated or prolonged skin contact.

Respiratory Respirator use is not expected to be necessary under normal conditions of use. In poorly ventilated areas, emergency situations or if exposure levels are exceeded, use NIOSH approved full face respirator.

Continued on Next Page

Hands	Chemical resistant gloves. Nitrile or Neoprene gloves. PVC gloves. 4H gloves. Butyl rubber gloves.
Feet	Chemical resistant boots or overshoes.
Other information	Not available.
Additional Exposure Control Remarks	Not available.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Liquid.	**Odor**	Strong Fruity. Medicinal.
pH	3 - 4.5 (Neat - without dilution)	**Color**	Colorless.
Specific gravity	1.05 - 1.062 @ 16°C (60°F)		
Density	8.75 - 8.85 lbs/gal @ 16°C (60°F)		
Flash Points	Closed cup: >93.4°C (200°F). (SFCC)		
Flammable Limits	L.E.L. Not available. U.E.L. Not available.		
Autoignition Temperature	Not available.		
Initial Boiling Point	Not available.		
Boiling Point	Not available.		
Vapor Density	>1 (Air = 1)		
Vapor Pressure	31 - mm Hg @ 38°C (100°F)		
Evaporation Rate	Not Available or Not Applicable for Solids.		
VOC	Not available.		
Viscosity	4 - 4 cP @ 16°C (60°F)		
Pour Point	-6.7°C (20°F)		
Solubility (Water)	Soluble		
Physical Chemical Comments	Not available.		

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Oxidizing material.
Hazardous Decomposition Products	Not applicable.
Hazardous Polymerization	Hazardous polymerization is not expected to occur.
Special Stability & Reactivity Remarks	Not available.

Continued on Next Page

Section 11. Toxicological information

Component Toxicological Information

Acute Animal Toxicity

Glutaraldehyde	ORAL (LD50): Acute: 100 mg/kg [Mouse]. 134 mg/kg [Rat]. VAPOR (LC50): Acute: 480 mg/m^3 4 hour/hours [Rat].

Chronic Toxicity Data

1) Glutaraldehyde

Glutaraldehyde is a component of this product. In long-term experimental animal studies, glutaraldehyde caused liver damage in mice (ACGIH, 1992), but it was not neurotoxic in rats (Spencer et al, 1978).

Female rats had increased large granular lymphocytic leukemias after receiving glutaraldehyde in the drinking water at levels up to 1,000 ppm for 2 years (Andersen, 1996).

The results of genetic studies have been mixed with no conclusive evidence of positive effects.

In 2-year inhalation studies, there was no evidence of carcinogenic activity in male or female rats exposed to 250, 500 or 750 ppb, or in male or female mice exposed to 62.5, 125, or 250 ppb glutaraldehyde. (OSHA ceiling limit is 0.2 ppm, ACGIH ceiling limit is 0.095 ppm). Incidences of nasal and respiratory lesions were increasedin both male/female rats and mice. Reduction in body weight, as compared to the controls was also noted.

Product Toxicological Information

Acute Animal Toxicity	ORAL (LD50): Acute: 1990 mg/kg [Rat]. DERMAL (LD50): Acute: 13600 mg/kg [Rabbit].
Target Organs	respiratory tract, skin/epithelium, eyes.
Other Adverse Effects	Glutaraldehyde may stain skin and nails to brown or golden brown color. Glutaraldehyde can cause allergic contact dermatitis, asthma and rhinitis and may aggravate existing asthmatic conditions.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Biodegradable/OECD	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks	An EcoTox™ Report, and/or the material's environmental fate is available upon request at the following number: 1-800-235-4249, then press 4.

Section 13. Disposal Considerations

Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with all applicable federal, state and local regulations. Note that these regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.

Additional Waste Remarks	Not available.

Continued on Next Page

Section 14. Transport Information

DOT Classification	Not regulated by DOT.
DOT Reportable Quantity	Not applicable.
Marine Pollutant	Not applicable.
Additional DOT Information	Not available.
Emergency Response Guide Page Number	Not applicable.

Section 15. Regulatory Information

HCS Classification	Target organ effects. Irritant. Sensitizer.
U.S. Federal Regulations	
Environmental Regulations	Extremely Hazardous Substances: Not applicable to any components in this product. SARA 313 Toxic Chemical Notification and Release Reporting: Not applicable to any components in this product. SARA 302/304 Emergency Planning and Notification substances: Not applicable to any components in this product. Hazardous Substances (CERCLA 302): Not applicable to any components in this product. SARA 311/312 MSDS distribution - chemical inventory - hazard identification: immediate health hazard; Clean Water Act (CWA) 307 Priority Pollutants: Not applicable to any components in this product. Clean Water Act (CWA) 311 Hazardous Substances: Not applicable to any components in this product. Clean Air Act (CAA) 112(r) Accidental Release Prevention Substances: Not applicable to any components in this product.
Threshold Planning Quantity (TPQ)	Not applicable.
TSCA Inventory Status	All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory. This product does not contain any components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States.
State Regulations	State specific information is available upon request from Baker Petrolite.
International Regulations	
Canada	All components are compliant with or are exempted from listing on the Canadian Domestic Substance List.
WHMIS (Canada)	D-1A, D-2B, E

Continued on Next Page

European Union	All components are included or are exempted from listing on the European Inventory of Existing Commercial Chemical Substances or the European List of Notified Chemical Substances.
	International inventory status information is available upon request from Baker Petrolite for the following countries: Australia, China, Korea (TCCL), Philippines (RA6969), or Japan.
Other Regulatory Information	This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide ACT (FIFRA) and is therefore exempt from US Toxic Substance Control Act (TSCA) Inventory listing requirements. EPA Registration No. 10707-40

Section 16. Other Information

Other Special Considerations 932
04/20/06 - Changes to Sections 2, 3, 5, 8, 9 and 15.

In April, 2005, a number of format changes were made. The most notable of these were switching Sections 2 and 3, moving the exposure limits to Section 8, and moving the flash point from Section 5 to Section 9.

Baker Petrolite Disclaimer

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

ConocoPhillips Pipe Line Company

Pipelines and Terminals – Health and Safety
HS Form: HAZCOM Chemical Review

Section 1 - General Information

to be completed by Requestor

Requestor: Steve Kober Phone: 503-248-1538 Date: 3/31/2008

Facility: Portland Products Terminal Site ID:

Product Name: X CIDE 102

Manufacturer: Baker Petrolite MSDS No.:

Type of Chemical: (Check one) ☐ Paint ☐ Solvent ☐ Cleaner ☐ Lubricant ☐ Adhesive
X Process Chemical (Requires MOC) ☐ Other (list):

Start or Stop Notice : (Check one) X Start **OR** ☐ Stop **AND** Effective Date: 4/2/2008

If this is a "Stop" notice, please complete to this point only and forward to your Safety Coordinator.

How will the chemical be used? Treating MIC in Product Storage Tanks.

Is the chemical a replacement? ☐ Yes X No If yes, for what?

Estimated usage (volume): 10 (Units) Gal X Single use ☐ Per week ☐ Per month ☐

Storage Location(s): ***Select closest storage area description from the following options: Additive Storage, Drum Storage, Office, Pipeline, Rack Area, Sample Shed, Shop, Sitewide, Tank Farm or Warehouse.***

Storage Container / Tank Capacity:

Container Type (Check one)

A ☐	Above Ground Tank	J ☐	Bag
B ☐	Below Ground Tank	K ☐	Box
C ☐	Tank Inside Building	L ☐	Cylinder
D ☐	Steel Drum	M ☐	Glass Bottles/Jugs
E ☐	Plastic/Non-Metal Drum	N ☐	Plastic Bottles/Jugs
F X	Can	O ☐	Tote Bin
G ☐	Carboy	P ☐	Tank Wagon
H ☐	Silo	Q ☐	Rail Car
I ☐	Fiber Drum	R ☐	Other

Pressure Storage Code (Check one)

1 X	Ambient pressure
2 ☐	Greater than ambient pressure
3 ☐	Less than ambient pressure

Temperature Storage Code (Check one)

4 X	Ambient temperature
5 ☐	Greater than ambient temperature
6 ☐	Less than ambient temp but not cryogenic
7 ☐	Cryogenic conditions

*** **REMINDER: ATTACH COPY OF MSDS BEFORE FORWARDING TO SAFETY COORDINATOR** ***

Section 2 - Health & Safety Considerations

to be completed by H&S Coordinator/Area Supv

Physical Hazards: ☐ Flammable ☐ Oxidizer ☐ Reactive ☐ Compressed gas

Health Hazards: ☐ Poison ☐ Carcinogen ☒ Corrosive ☐ Irritant ☐ Sensitizer
☐ Radioactive ☐ Reproductive Toxin ~~Combustible~~

Incompatible Materials: Oxidizing materials

NFPA/HMIS Ratings: Health: 3 Flammability: 1 Reactivity: 0

Personal Protective Equipment Requirements (Check all that apply)

Skin: ☒ Nitrile & Neoprene Gloves ☐ Splash Apron ☐ Other

Eye/Face: ☒ Safety Glasses ☒ Goggles ☐ Face Shield

Respiratory: ☐ Half-Mask APR ☐ Full-Face APR Cartridge Type
☐ Air-Line ☐ SCBA

Other:

Other protective measures required:

ConocoPhillips Pipe Line Company

Pipelines and Terminals – Health and Safety
HS Form: HAZCOM Chemical Review

Section 3 - Employee Training Considerations

to be completed by H&S Coordinator

Is additional training required? ☐ Yes ☐ No If yes, why? _____

What type of training is required? ROAD MSDS

Section 4 - Environmental Considerations

to be completed by Environmental Coordinator

SARA Hazards						Bulk Density (Lbs./Gallon)	Physical Form		
Health Hazards		Physical Hazards							
A/I	C/D	F	R	P	N/A		Solid	Liquid	Gas
		X				0.66		X	

NYIC

SARA 313

Does this product contain chemical(s) subject to SARA 313? ☐ Yes ☒ No

Reportable Quantity

Release Volume to Exceed SARA or CERCLA reportable quantities:

Component:	RQ:	Release Volume (Gal):
Component:	RQ:	Release Volume (Gal):
Component:	RQ:	Release Volume (Gal):
Component:	RQ:	Release Volume (Gal):
Component	RQ:	Release Volume (Gal):

Comments

_____

_____

Section 5 – HSE Review

H&S Coordinator: [signature] Date: 3-31-08 ☑ Forwarded ☐ Returned

Basis for Return: _____

Env. Coordinator: [signature] Date: 03/03/08 ☒ Forwarded ☐ Returned

Basis for Return: _____

Section 6 – Chemical Inventory Management

Electronic Update

WebMSDS Update	By:	Date:
Essential Update	By:	Date:

Routing: Send original form **and MSDS** to Health and Safety Coordinator.
H&S Coordinator forwards form **w/MSDS** to Environmental Coordinator.
Environmental Coordinator forwards form **w/MSDS** to HSE Analyst.
HSE Analyst updates WebMSDS and Essential databases, returning original request to facility.

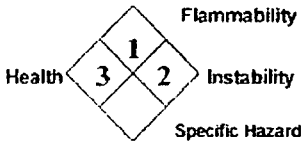
BAKER HUGHES
Baker Petrolite

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name	**X-CIDE® 825 INDUSTRIAL BACTERICIDE**	**Code**	XC825
Supplier	Baker Petrolite A Baker Hughes Company 12645 W. Airport Blvd. (77478) P.O. Box 5050 Sugar Land, TX 77487-5050 For Product Information/MSDSs Call: 800-231-3606 (8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 281-276-5400	**Version**	3.0
Material Uses	Industrial Bactericide.	**Effective Date**	**5/8/2006**
24 Hour Emergency Numbers	CHEMTREC 800-424-9300 (U.S. 24 hour) Baker Petrolite 800-231-3606 (001)281-276-5400 CANUTEC 613-996-6666 (Canada 24 hours) CHEMTREC Int'l 01-703-527-3887 (International 24 hour)	**Print Date**	5/8/2006
			® a trademark of Baker Hughes, Inc.

National Fire Protection Association (U.S.A.)



Section 2. Hazards Identification

Physical State and Appearance	State: Stick. Solid., Color: White., Odor: Slight
CERCLA Reportable Quantity	Not applicable.
Hazard Summary	DANGER. May cause chronic effects. Flammable solid. May be irritating to eyes, skin and respiratory tract. May cause skin sensitization (allergic reaction).
Routes of Exposure	Skin (Contact), Eyes, Inhalation.
Potential acute health effects	
Eyes	May be corrosive to the eyes. May cause eye burns and permanent eye injury.
Skin	May be severely irritating to the skin. May cause burns on prolonged contact. Skin sensitizer. May cause allergic skin reactions with repeated exposure.
Inhalation	May be severely irritating to the lungs.
Ingestion	Not considered a likely route of exposure, however, may be corrosive if swallowed.
Medical Conditions aggravated by Exposure	Exposure to this product may aggravate medical conditions involving the following: gastrointestinal tract, respiratory tract, skin/epithelium, eyes.
See Toxicological Information (section 11)	
Additional Hazard Identification Remarks	Repeated or prolonged contact may cause dermatitis (inflammation) and defatting of the skin (dryness).

Continued on Next Page

Section 3. Composition and Information on Ingredients

Name	CAS #	% by Weight
2-Bromo-2-nitropropane-1,3-diol	52-51-7	60 - 100

See Section 8 for information on permissible exposure limits and threshold limit values.

Section 4. First Aid Measures

Eye Contact	Immediately flush the eye(s) continuously with lukewarm, gently flowing water for at least 20-60 minutes while holding the eyelid(s) open. Get medical attention immediately.
Skin Contact	Remove contaminated clothing and shoes immediately. Wash affected area with soap and mild detergent and large amounts of lukewarm, gently flowing water until no evidence of chemical remains (for at least 20-60 minutes). Get medical attention if irritation occurs.
Inhalation	Remove to fresh air. Oxygen may be administered if breathing is difficult. If not breathing, administer artificial respiration and seek medical attention. Get medical attention if symptoms appear.
Ingestion	Get medical attention immediately. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Wash out mouth with water if person is conscious. Never induce vomiting or give anything by mouth to a victim who is unconscious or having convulsions.
Notes to Physician	Not available.
Additional First Aid Remarks	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	Flammable solid. May be ignited by friction, spark or flame.
OSHA Flammability Class	IIIB
Products of Combustion	These products are Hydrogen bromide. Bromine. nitrogen oxides (NO, NO2...) carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Open Flames/Sparks/Static. Heat.
Fire Fighting Media and Instructions	In case of fire, use foam, dry chemicals, or CO2 fire extinguishers. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and public waterways.
Protective Clothing (Fire)	Do not enter fire area without proper personal protective equipment, including NIOSH approved self-contained breathing apparatus.
Special Remarks on Fire Hazards	Not available.

Continued on Next Page

Section 6. Accidental Release Measures

Spill	Put on appropriate personal protective equipment. Evacuate surrounding areas, if necessary. Vacuum or carefully scoop up spilled materials and place in an appropriate container for disposal. Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Other Statements	Not applicable.
Additional Accidental Release Measures Remarks	Not available.

Section 7. Handling and Storage

Handling and Storage	Put on appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors or dusts. Use only with adequate ventilation. Store in a dry, cool and well ventilated area. Keep away from incompatibles. Keep container tightly closed and dry.
Additional Handling and Storage Remarks	Not available.

Section 8. Exposure Controls/Personal Protection

Exposure Limits	2-Bromo-2-nitropropane-1,3-diol	Not available.

Additional Information on Exposure Limits	Not available.
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection

Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended, however, to determine the level of personal protective equipment appropriate for these job tasks and conditions.

Eyes Chemical safety goggles.

Body Wear long sleeves to prevent repeated or prolonged skin contact.

Respiratory Respirator use is not expected to be necessary under normal conditions of use. In poorly ventilated areas or in emergency situations, use NIOSH approved full face respirator.

Hands Chemical resistant gloves. Nitrile or Neoprene gloves. PVC gloves.

Feet Chemical resistant boots or overshoes.

Other information Not available.

Additional Exposure Control Remarks	Not available.

Continued on Next Page

Section 9. Physical and Chemical Properties

Physical State and Appearance	Stick. Solid.	Odor	Slight
pH	5.9 - 6.1 (1% Aqueous Solution)	Color	White.
Specific gravity	1.694 - 1.706 @ 16°C (60°F)		
Density	14.11 - 14.21 lbs/gal @ 16°C (60°F)		
Flash Points	Closed cup: >93.4°C (200°F). (SFCC)		
Flammable Limits	L.E.L. Not available. U.E.L. Not available.		
Autoignition Temperature	Not available.		
Initial Boiling Point	Not available.		
Boiling Point	Not available.		
Vapor Density	>1 (Air = 1)		
Vapor Pressure	Not Available or Not Applicable for Solids.		
Evaporation Rate	Not Available or Not Applicable for Solids.		
VOC	Not available.		
Viscosity	Not available.		
Pour Point	70°C (158°F) Melting Point		
Solubility (Water)	Soluble		
Physical Chemical Comments	Not available.		

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Oxidizing material. Metal. Alkali.
Hazardous Decomposition Products	Not applicable.
Hazardous Polymerization	Hazardous polymerization is not expected to occur.
Special Stability & Reactivity Remarks	May decompose on exposure to light.

Continued on Next Page

Section 11. Toxicological information

Component Toxicological Information

Acute Animal Toxicity

2-Bromo-2-nitropropane-1,3-diol	ORAL (LD50): Acute: 180 mg/kg [Rat]. 270 mg/kg [Mouse]. DERMAL (LD50): Acute: 64 to 160 mg/kg [Rat]. 4750 mg/kg [Mouse].

Chronic Toxicity Data

1) 2-Bromo-2-nitropropane-1,3-diol

1,3-Propanediol, 2-bromo-2-nitro-, is a component of this product. Daily for 90-days, oral doses of 20 mg/kg administrered to male and female rats were well tolerated. Doses of 80 and 160 mg/kg cased gastrointestinal lesions, respiratory distress, and some deaths.

Product Toxicological Information

Acute Animal Toxicity	ORAL (LD50): Acute: 307 mg/kg [Female rat]. 327 mg/kg [Female Mouse]. DERMAL (LD50): Acute: 1600 mg/kg [Rat].
Target Organs	gastrointestinal tract, respiratory tract, skin/epithelium, eyes.
Other Adverse Effects	Not available.

Section 12. Ecological Information

Ecotoxicity	X-CIDE® 825 INDUSTRIAL BACTERICIDE	Rainbow trout (LC50)	96 hour/hours 20 mg/l
		Mysid shrimp (LC50)	96 hour/hours 5.9 mg/l
		Bluegill sunfish (LC50)	96 hour/hours 35.7 mg/l
		Sheepshead minnow (LC50)	96 hour/hours 57.6 mg/l
		Brown shrimp. (LC50)	96 hour/hours 121 mg/l
BOD5 and COD	Not available.		
Biodegradable/OECD	Not available.		
Toxicity of the Products of Biodegradation	Not available.		
Special Remarks	An EcoTox™ Report, and/or the material's environmental fate is available upon request at the following number: 1-800-235-4249, then press 4. This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, steams, ponds or estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) Permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.		

Continued on Next Page

Section 13. Disposal Considerations

Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with all applicable federal, state and local regulations. Note that these regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.

Additional Waste Remarks	Not available.

Section 14. Transport Information

DOT Classification	2-Bromo-2-nitropropane-1,3-diol, 4.1, UN3241, III
DOT Reportable Quantity	Not applicable.
Marine Pollutant	Not applicable.
Additional DOT Information	This material must be packed according to packing method OP6. It must be protected from direct sunshine and heat.
Emergency Response Guide Page Number	133

Section 15. Regulatory Information

HCS Classification	Target organ effects. Flammable solid. Irritant. Sensitizer. Toxic.
U.S. Federal Regulations	
Environmental Regulations	Extremely Hazardous Substances: Not applicable to any components in this product. SARA 313 Toxic Chemical Notification and Release Reporting: Not applicable to any components in this product. SARA 302/304 Emergency Planning and Notification substances: Not applicable to any components in this product. Hazardous Substances (CERCLA 302): Not applicable to any components in this product. SARA 311/312 MSDS distribution - chemical inventory - hazard identification: fire; reactive; immediate health hazard; Clean Water Act (CWA) 307 Priority Pollutants: Not applicable to any components in this product. Clean Water Act (CWA) 311 Hazardous Substances: Not applicable to any components in this product. Clean Air Act (CAA) 112(r) Accidental Release Prevention Substances: Not applicable to any components in this product.
Threshold Planning Quantity (TPQ)	Not applicable.
TSCA Inventory Status	This product or its components, if a mixture, are not listed on the TSCA inventory. This product does not contain any components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States.

Continued on Next Page

State Regulations	State specific information is available upon request from Baker Petrolite.
International Regulations	
Canada	Not all components are included on the Canadian Domestic Substances List.
WHMIS (Canada)	B-4, D-1B, D-2B
European Union	Not all components are included on the European Inventory of Existing Commercial Chemical Substances or the European List of Notified Chemical Substances.
	International inventory status information is available upon request from Baker Petrolite for the following countries: Australia, China, Korea (TCCL), Philippines (RA6969), or Japan.
Other Regulatory Information	This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide ACT (FIFRA) and is therefore exempt from US Toxic Substance Control Act (TSCA) Inventory listing requirements. EPA Registration No. 33753-18-10707

Section 16. Other Information

Other Special Considerations	File 1177 05/21/03 - Changes to Sections 1, 3, 9, 12, and 15 05/08/06 - Changes to Sections 1, 2, 3, 5, 8, 9, 11, 14 and 15.

In April, 2005, a number of format changes were made. The most notable of these were switching Sections 2 and 3, moving the exposure limits to Section 8, and moving the flash point from Section 5 to Section 9.

Baker Petrolite Disclaimer

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

ConocoPhillips Pipe Line Company

Pipelines and Terminals – Health and Safety
HS Form: HAZCOM Chemical Review

Section 1 - General Information

to be completed by Requestor

Requestor: Steve Kober Phone: 503-248-1538 Date: 3/31/2008

Facility: Portland Products Terminal Site ID:

Product Name: X CIDE 825

Manufacturer: Baker Petrolite MSDS No.:

Type of Chemical: (Check one) ☐ Paint ☐ Solvent ☐ Cleaner ☐ Lubricant ☐ Adhesive
X Process Chemical (Requires MOC) ☐ Other (list):

Start or Stop Notice : (Check one) X Start OR ☐ Stop AND Effective Date: 4/2/2008

If this is a "Stop" notice, please complete to this point only and forward to your Safety Coordinator.

How will the chemical be used? Treating MIC in Product Storage Tanks.

Is the chemical a replacement? ☐ Yes X No If yes, for what?

Estimated usage (volume): 10 (Units) Gal X Single use ☐ Per week ☐ Per month ☐

Storage Location(s): ***Select closest storage area description from the following options: Additive Storage, Drum Storage, Office, Pipeline, Rack Area, Sample Shed, Shop, Sitewide, Tank Farm or Warehouse.***

Storage Container / Tank Capacity:

Container Type (Check one)

A ☐	Above Ground Tank	J ☐	Bag
B ☐	Below Ground Tank	K ☐	Box
C ☐	Tank Inside Building	L ☐	Cylinder
D ☐	Steel Drum	M ☐	Glass Bottles/Jugs
E ☐	Plastic/Non-Metal Drum	N ☐	Plastic Bottles/Jugs
F X	Can	O ☐	Tote Bin
G ☐	Carboy	P ☐	Tank Wagon
H ☐	Silo	Q ☐	Rail Car
I ☐	Fiber Drum	R ☐	Other

Pressure Storage Code (Check one)

1 X	Ambient pressure
2 ☐	Greater than ambient pressure
3 ☐	Less than ambient pressure

Temperature Storage Code (Check one)

4 X	Ambient temperature
5 ☐	Greater than ambient temperature
6 ☐	Less than ambient temp but not cryogenic
7 ☐	Cryogenic conditions

*** **REMINDER: ATTACH COPY OF MSDS BEFORE FORWARDING TO SAFETY COORDINATOR** ***

Section 2 - Health & Safety Considerations

to be completed by H&S Coordinator/Area Supv

Physical Hazards: ☒ Flammable ☐ Oxidizer ☐ Reactive ☐ Compressed gas

Health Hazards: ☐ Poison ☐ Carcinogen ☒ Corrosive ☐ Irritant ☐ Sensitizer
☐ Radioactive ☐ Reproductive Toxin

Incompatible Materials: Oxidizing materials, Metal, Alkali

NFPA/HMIS Ratings: Health: 3 Flammability: 1 Reactivity: 1

Personal Protective Equipment Requirements (Check all that apply)

Skin: ☒ Nitrile or Neoprene Gloves ☐ Splash Apron ☐ Other

Eye/Face: ☒ Safety Glasses ☒ Goggles ☐ Face Shield

Respiratory: ☐ Half-Mask APR ☐ Full-Face APR Cartridge Type
☐ Air-Line ☐ SCBA

Other:

Other protective measures required:

ConocoPhillips Pipe Line Company

Pipelines and Terminals – Health and Safety
HS Form: HAZCOM Chemical Review

Section 3 - Employee Training Considerations

to be completed by H&S Coordinator

Is additional training required? ☐ Yes ☒ No If yes, why? _____

What type of training is required? read MSDS

Section 4 - Environmental Considerations

to be completed by Environmental Coordinator

SARA Hazards					
Health Hazards		Physical Hazards			
A/I	C/D	F	R	P	N/A

Bulk Density (Lbs./Gallon)
14.23

Physical Form		
Solid	Liquid	Gas
☒		

SARA 313
Does this product contain chemical(s) subject to SARA 313? ☐ Yes ☒ No

Reportable Quantity
Release Volume to Exceed SARA or CERCLA reportable quantities:

Component:	RQ:	Release Volume (Gal):
Component:	RQ:	Release Volume (Gal):
Component:	RQ:	Release Volume (Gal):
Component:	RQ:	Release Volume (Gal):
Component	RQ:	Release Volume (Gal):

Comments

Section 5 – HSE Review

H&S Coordinator: [signature] Date: 3-31-08 ☒ Forwarded ☐ Returned
Basis for Return: _____

Env. Coordinator: [signature] Date: 05/05/08 ☒ Forwarded ☐ Returned
Basis for Return: _____

Section 6 – Chemical Inventory Management

Electronic Update

WebMSDS Update	By:	Date:
Essential Update	By:	Date:

Routing: Send original form **and MSDS** to Health and Safety Coordinator.
H&S Coordinator forwards form **w/MSDS** to Environmental Coordinator.
Environmental Coordinator forwards form **w/MSDS** to HSE Analyst.
HSE Analyst updates WebMSDS and Essential databases, returning original request to facility.